Pembinaan Teris Sepakat Sdn Bhd v Kumpulan Ikram Sdn Bhd & Anor (Mohd Rozi bin Salleh & Anor, third party)

HIGH COURT (SHAH ALAM) — CIVIL SUIT NO 22–1519 OF 2009
LIM CHONG FONG JC
30 MARCH 2015

Civil Procedure — Pleadings — Material facts — Fraud — Whether fraud has to be specifically pleaded

Contract — Terms — Implied terms — Implied terms applicable to normal construction contract

Evidence — Witness — Expert witness — Expert must be independent — Court's right to prefer one opinion to other in cases of conflicting expert testimony — Evidence Act 1950 s 45

Tort — Negligence — Professional negligence — Definition of professional man — Whether includes contractors

Tort — Negligence — Professional negligence — Engineers — Defective construction and failure of contractor to complete construction — Whether engineer in breach of duty to carry out soil investigation work — Whether inaccurate/erroneous soil investigation report causing road embankment fill failure — Whether engineer liable for design inadequacy — Whether engineer liable for damage

The plaintiff was awarded a contract ('construction contract') for upgrading/raising the level of Jalan Chukai to Air Putih in Terengganu ('the project') by the Public Works Department Malaysia ('the employer'). The defendants were related companies that undertook soil investigation works. The third party was a partnership of consulting civil engineers. Pursuant to the construction contract, the employer approved the appointment of the first and/or second defendants and the third party as consultants for the project. Accordingly, the plaintiff appointed the first and/or second defendants to carry out soil investigation work ('SI Works') at the project site. The plaintiff also appointed the third party as the consultant engineer for the project. The third party instructed the first defendant to carry out five exploratory boreholes at the locations indicated in attached plans. The first defendant commenced the SI works accordingly. Subsequently the third party issued fresh instructions to

the first defendant to carry out seven exploratory boreholes. The third party submitted the soil investigation work document to the employer with a copy sent to the first defendant. The third party in reliance on the employer's approved first SI report and the other test reports and results then proceeded to design the project. The design was subsequently approved by the employer. During construction of the project, a massive road embankment fill failure occurred. A second SI report was then prepared and the third party made recommendation for remedial measures. The employer however terminated the construction contract because of poor project work progress. The plaintiff claimed that the termination was caused by the first defendant's erroneous first SI report. The plaintiff contended that the first SI report was inaccurate/erroneous by reason of non disclosure of a thick layer of very silty clay soil in exploratory borehole BH-B4 which caused the road embankment fill failure. The plaintiff hence commenced this suit claiming from the defendants for all loss and damage suffered including for the terminated construction contract. The defendants in turn enjoined the third party for indemnity or contribution. Both parties called an expert witness to enlighten the court on the technical issues.

Held, dismissing the plaintiff's claim with costs and dismissing the defendants' claim against the third party with no order as to costs:

(1) The nature of the contractual relationship between the plaintiff and the first and/or second defendants was that of a design and build/turnkey contractor and specialist soil investigation subcontractor. The letter of appointment of the defendants was rudimentary with no detail express terms mentioned therein. Thus, the contract must be construed in the light of the usual implied terms applicable to a normal construction contract, that is to say the contractor was obliged to: (a) supply materials that were of good quality and reasonably fit for the purpose for which they will be used; and (b) work in a workmanlike manner using all proper skill and care (see para 46).

(2) There was deemed reliance by the plaintiff on the care and skill of the defendants in the performance of their obligations required under the construction contract (see para 46).

(3) The scope of the professional man has been broadened in *Henderson v Merett Syndicates Ltd* [1995] 2 AC 464 (HL) to include persons who perform services of a professional or quasi-professional nature possessing a special expertise. The professional man may include contractors. Hence, the defendants owed the plaintiff the tortuous duty of care to use reasonable skill and care besides the contractual obligation to work in a workmanlike manner using all proper skill and care (see paras 47–48).

(4) Although there is the Board of Engineers circular number 4 of 2005 that required the consulting engineer to take responsibility for sub surface

investigation, the circular came into force only in 2005. The terms of engagement of the third party by the plaintiff as provided in the Board of Engineers Malaysia Scale of Fees (1998) that were applicable at the material time did not prescribe mandatory supervision of sub surface investigation on the part of the third party. Thus, there was prima facie no duty owed by the third party to supervise the defendants carrying out of the SI works (see paras 50–51).

(5) In the circumstances of the case, the contracting party was the first and not the second defendant vis a vis the plaintiff. The second defendant did not play any role in the project (see para 57).

(6) The plaintiff solely based its case on the comparison between BH-B4 and the post failure boreholes borelog. The plaintiff however did not go on to cogently illustrate or explain how the alleged inaccuracy or error came about particularly that the exploratory boring process and its subsequent reporting did not comply with Nota Teknik 20/98 and relevant standard engineering practice as required in cl 5.3 of section E, technical requirements in the need statement of the employer. Mere comparison of bore logs is inconclusive and hence inadequate to blame the first defendant that the impugned borehole BH-B4 was in fact done inaccurately or erroneously. The location of borehole BH-B4 as carried out by the first defendant was neither wrong nor in breach of the instruction of the third party at that material time (see paras 64, 67 & 70).

(7) The plaintiff's expert witness (PW4) testified that the first defendant was dishonest and cheated in the carrying out of the SI works. This assertion was equivalent to fraud having been committed by the first defendant and that had to be specifically pleaded. However, the plaintiff did not however do so (see para 74).

(8) PW4 was somewhat partisan and the court was unconvinced by his simplistic testimony that the first defendant concocted bore logs BH-B3 and BH-B4. An expert witness testifying pursuant to s 45 of the Evidence Act 1950 must be independent. He must neither be over-ready to confirm preconceived theories nor zealously support or oppose an untenable hypothesis (see para 75).

(9) The court preferred the testimony of the defendant's expert witness (DW2) whose view was more measured in his comments. In addition, his command of the relevant facts and hence explanation on the technical issues were thorough and cogent. Where there is conflicting expert testimony, the court has the right to prefer one opinion to the other; *Tengku Abdullah ibni Sultan Abu Bakar v Mohd Latiff bin Shah Mohd* [1996] 2 MLJ 265 referred (see para 76).

(10) On the balance of probabilities, the cause of the rotational slope failure of the road embankment fill was design inadequacy. Since the third party was responsible for the design, the fault must lie on them. The first defendant would have contributed to the fault if the bore logs were inaccurate and/or erroneous but that was not the case. As pointed out by DW2, the fill embankment design of the third party in reliance thereon was in any event inherently at risk of failure. The first defendant was thus wholly exonerated of fault (see para 88).

(11) The third party was the agent of the plaintiff in a design and build/turnkey contracting arrangement. Since the cause of the road fill embankment failure had been found to be due to inadequate design and hence the fault of the third party, it followed that the plaintiff as the principal must assume and absorb the consequences. Accordingly the plaintiff's case against the defendants failed. The defendants were neither in breach of contract nor negligent (see para 90).

[Bahasa Malaysia summary

Plaintif telah diawardkan satu kontrak ('kontrak pembinaan') kerana menaik taraf/menaikkan aras Jalan Chukai hingga Air Putih di Terengganu ('projek itu') oleh Jabatan Kerja Raya Awam Malaysia ('majikan'). Defendan-defendan berkaitan syarikat-syarikat yang melaksanakan kerja-kerja penyelidikan tanah. Pihak ketiga adalah perkongsian penasihat jurutera-jurutera awam. Menurut kontrak pembinaan, majikan itu meluluskan pelantikan defendan-defendan pertama dan/atau kedua dan pihak ketiga sebagai perunding projek itu. Oleh itu, plaintif dilantik sebagai defendan pertama dan/atau kedua untuk menjalankan kerja-kerja penyelidikan tanah ('kerja-kerja PT') di tapak projek. Plaintif juga melantik pihak ketiga sebagai jurutera perunding untuk projek tersebut. Pihak ketiga mengarahkan defendan pertama untuk menjalankan lima lubang gerudi penerokaan di lokasi-lokasi yang dinyatakan di dalam pelan yang dilampirkan. Defendan pertama memulakan kerja-kerja PT dengan sewajarnya. Selepas itu pihak ketiga mengeluarkan arahan baru kepada defendan pertama untuk menjalankan tujuh lubang gerudi penerokaan. Pihak ketiga mengemukakan dokumen kerja penyelidikan tanah kepada majikan dengan satu salinan dihantar kepada defendan pertama. Pihak ketiga kerana bergantung kepada majikan meluluskan Laporan PT pertama dan laporan ujian lain dan keputusan kemudiannya mereka bentuk projek. Reka bentuk ini telah diluluskan oleh majikan. Semasa pembinaan projek itu, kegagalan pengisian tambak jalan secara besar-besaran telah berlaku. Laporan PT kedua kemudiannya disediakan dan pihak ketiga membuat cadangan untuk langkah-langkah pemulihan. Majikan bagaimanapun telah menamatkan kontrak pembinaan itu kerana prestasi kerja projek yang tidak memuaskan. Plaintif mendakwa bahawa penamatan itu disebabkan oleh kesalahan Laporan PT pertama defendan pertama. Plaintif menegaskan bahawa Laporan PT pertama adalah tidak tepat/salah oleh sebab tiada pendedahan tentang lapisan

tebal tanah liat yang berkelodak sangat dalam lubang telaga penerokaan BH-B4 yang menyebabkan kegagalan pengisian benteng jalan. Plaintif dengan itu memulakan saman ini dengan menuntut daripada defendan untuk semua kerugian dan kerosakan yang ditanggung termasuk untuk kontrak pembinaan tang telah ditamatkan. Defendan pula memerintahkan pihak ketiga untuk ganti rugi atau sumbangan. Kedua-dua pihak telah memanggil seorang saksi pakar untuk menerangkan kepada mahkamah mengenai isu-isu teknikal.

Diputuskan, menolak tuntutan plaintif dengan kos dan menolak tuntutan defendan-defendan terhadap pihak ketiga tanpa perintah untuk kos:

(1) Sifat hubungan kontraktual antara plaintif da defendan-defendan pertama dan/atau kedua adalah seperti kontraktor rekaan dan binaan/serah kunci dan pakar kontraktor kecil penyelidikan tanah. Surat pelantikan defendan-defendan adalah yang asas tanpa syarat-syarat nyata terperinci yang disebut di dalamnya. Oleh itu, kontrak itu hendaklah ditafsirkan berdasarkan terma tersirat yang biasa terpakai kepada kontrak pembinaan biasa iaitu kontraktor yang bertanggungjawab untuk: (a) bahan-bahan bekalan yang berkualiti baik dan semunasabahnya sesuai untuk tujuan yang mana mereka akan digunakan; dan (b) bekerja dengan cara yang berkemahiran bekerja menggunakan semua kemahiran dan sikap berjaga-jaga yang sewajarnya (lihat perenggan 46).

(2) Terdapat andaian kebergantungan oleh plaintif berhubung sikap berjaga-jaga dan kemahiran defendan-defendan dalam pelaksanaan obligasi mereka yang dikehendaki di bawah kontrak pembinaan itu (lihat perenggan 46)

(3) Skop seorang lelaki profesional telah diperluaskan dalam kes *Henderson v Sindiket Merett Ltd* [1995] 2 AC 464 (HL) untuk memasukkan orang yang melaksanakan perkhidmatan yang bersifat profesional atau separa profesional yang mempunyai kepakaran khas. Seseorang profesional itu mungkin termasuk kontraktor. Oleh itu, defendan mempunyai kewajipan berjaga-jaga berdasarkan tort terhadap plaintif untuk menggunakan kemahiran dan sikap berjaga-jaga yang munasabah selain daripada obligasi kontraktual untuk bekerja dengan cara yang berkemahiran bekerja menggunakan semua kemahiran dan sikap berjaga-jaga sewajarnya (lihat perenggan 47–48).

(4) Walaupun ada pekeliling bilangan 4 tahun 2005 Lembaga Jurutera yang memerlukan jurutera perunding untuk mengambil tanggungjawab untuk siasatan permukaan kecil, pekeliling itu hanya berkuatkuasa pada tahun 2005. Terma-terma penglibatan pihak ketiga oleh plaintif sebagaimana yang diperuntukkan pada Lembaga Jurutera Malaysia Skala Fi (1998) yang terpakai pada masa tersebut tidak mewajibkannya pengawasan mandatori siasatan permukaan kecil di pihak ketiga. Oleh itu, tidak terdapat kewajiban prima facie oleh pihak ketiga untuk

menyelia defendan melaksanakan Kerja-kerja PT (lihat perenggan 50–51).

(5) Dalam hal keadaan kes itu, pihak yang mengkontrak adalah defendan pertama dan bukan defendan kedua berbanding plaintif. Defendan kedua tidak memainkan apa-apa peranan dalam projek ini (lihat perenggan 57).

(6) Plaintif berasaskan kesnya semata-mata atas perbandingan antara BH-B4 dan pasca kegagalan lubang gerudi log lubang jarak. Plaintif bagaimanapun tidak memberikan alasan-alasan yang menggambarkan atau menerangkan bagaimana ketidaktepatan atau kesalahan yang dikatakan itu berlaku khususnya proses gerudian eksplorasi dan laporan berikutnya yang tidak mematuhi Nota Teknik 20/98 dan piawai amalan kejuruteraan berkaitan seperti yang dikehendaki di dalam fasal 5.3 seksyen E, keperluan teknikal dalam penyata keperluan bagi majikan. Perbandingan lubang kayu gerudisahaja tidak meyakinkan dan dengan itu tidak mencukupi untuk menyalahkan defendan pertama bahawa lubang gerudi BH-B4 yang dipersoalkan itu sebenarnya dilakukan secara tidak tepat atau tersilap. Lokasi lubang gerudi BH-B4 yang dilaksanakan oleh defendan pertama adalah tidak salah dan tidak melanggar arahan pihak ketiga pada masa matan (lihat perenggan 64, 67 & 70).

(7) Saksi pakar plaintif ('PW4') telah memberi keterangan bahawa defendan pertama tidak jujur dan menipu dalam menjalankan kerja-kerja PT. Dakwaan ini adalah bersamaan dengan penipuan yang telah dilakukan oleh defendan pertama dan terpaksa dipli secara spesifik. Walau bagaimanapun, plaintif tidak berbuat demikian (lihat perenggan 74).

(8) PW4 agak berat sebelah dan mahkamah tidak yakin dengan keterangannya yang terlalu mudah yang pertama defendan mereka-reka kayu balak gerek BH-B3 dan BH-B4. Seorang saksi pakar memberi keterangan menurut s 45 Akta Keterangan 1950 perlu bebas. Dia mesti tidak melebihi sedia untuk mengesahkan teori pendahulu dan tidak bersemangat menyokong atau menentang satu hipotesis tidak dapat dipertahankan (lihat perenggan 75).

(9) Mahkamah memilih keterangan saksi pakar defendan ('DW2') yang mempunyai pandangan yang lebih nyata dalam komennya. Di samping itu, penguasaannya mengenai fakta-fakta yang berkaitan dan oleh itu penjelasan mengenai isu-isu teknikal adalah menyeluruh dan meyakinkan. Jika terdapat percanggahan keterangan pakar, mahkamah mempunyai hak untuk memilih satu pendapat yang lain; *Tengku Abdullah ibni Sultan Abu Bakar v Mohd Latiff bin Shah Mohd* [1996] 2 MLJ 265 dirujuk (lihat perenggan 76).

(10) Atas imbangan kebarangkalian, punca kegagalan cerun putaran untuk mengisi tebing jalan adalah reka bentuk yang tidak mencukupi. Oleh

kerana pihak ketiga adalah bertanggungjawab bagi reka bentuk, kesilapan ini mesti terletak pada mereka. Defendan pertama telah menyumbang kepada kesalahan jika lubang gerudi adalah tidak tepat dan/atau salah tetapi itu tidak berlaku. Seperti yang ditunjukkan oleh DW2, rekaan pengisian benteng pihak ketiga itu bergantung atasnya adalah dalam apa jua keadaan memang pada risiko kegagalan. Defendan pertama telah dengan itu terlepas sepenuhnya daripada kesalahan (lihat perenggan 88).

(11) Pihak ketiga adalah ejen plaintif dalam reka bentuk dan binaan/serah kunci penyusunan berkontrak. Oleh kerana punca kegagalan benteng pengisian jalan telah didapati telah disebabkan oleh reka bentuk yang tidak mencukupi dan oleh itu kesalahan pihak ketiga, ia adalah diikuti bahawa plaintif sebagai prinsipal mesti menerima dan menyerap akibatnya. Oleh itu kes plaintif terhadap defendan gagal. Defendan tidak melanggar kontrak atau cuai (lihat perenggan 90).]]

Notes

For cases on material facts, see 2 *Mallal's Digest* (5th Ed, 2015) paras 7134–7153.

For cases on implied terms, see 3(2) *Mallal's Digest* (4th ed, 2013 reissue) paras 6655–6708.

For cases on expert witness, see 7(1) *Mallal's Digest* (5th Ed, 2015) paras 3476–3484.

For cases on profesional negligence, see 12(1) *Mallal's Digest* (4th Ed, 2013 Reissue) paras 1550–1551.

Cases referred to

Asean Securities Paper Mills Sdn Bhd v CGU Insurance Bhd [2007] 2 MLJ 301; [2007] 2 CLJ 1, FC (refd)

Barclay Bank Plc v Fairclough Building Ltd (1995) 44 Con LR 35, CA (refd)

Brickfield Properties Ltd v Newton [1971] 1 WLR 862, CA (refd)

Esso Petroleum Co Ltd v Mardon [1976] QB 801, CA (refd)

Great Nottingham Co-operative Society Ltd v Cementation Piling and Foundations Ltd and Ors [1988] 2 All ER 971; (1988) 17 ConLR 43, CA (refd)

Henderson v Merett Syndicates Ltd [1995] 2 AC 464, HL (refd)

Jaafar bin Shaari & Anor v Tan Lip Eng & Anor [1997] 3 MLJ 693, SC (refd)

KC Leong Holdings Sdn Bhd v Datin Moh Bee Ling [2015] 7 MLJ 10, HC (refd)

Lim Soh Wah & Anor v Wong Sin Chong & Anor & Another Appeal [2001] 2 CLJ 344, CA (refd)

Loh Chiak Eong & Anor v Lok Kok Beng & Ors [2013] 1 MLJ 27; [2012] 9 CLJ 699, HC (refd)

Moresk Cleaners Ltd v Hicks [1966] 2 Lloyds Rep 338 (refd)

PB Malaysia Sdn Bhd v Samudra (M) Sdn Bhd [2009] 7 MLJ 681, HC (refd)

A *Shell (M) Trading Sdn Bhd v Tan Bee Leh @ Tan Yue Khoen & Ors* [2013] 8 MLJ 533, HC (refd)
Singapore Finance Ltd v Lim Kah Ngam (S'pore) Pte Ltd & Eugene HL Chan Associates (third party) [1984] 2 MLJ 202 (refd)
Sutcliffe v Thackrah [1974] AC 727, HL (refd)
B *Tan Ah Tong v Parveen Kaur* [2011] 5 MLJ 428, CA (refd)
Tengku Abdullah ibni Sultan Abu Bakar & Ors v Mohd Latiff bin Shah Mohd & Ors and Other Appeals [1996] 2 MLJ 265 (CA) (refd)
Tesco Stores Ltd v Costain Construction Ltd and others [2003] EWHC 1487, QBD (refd)
C *National Justice Cia Naviera SA v Prudential Assurance Co Ltd, The Ikarian Reefer* [1995] 1 Lloyd's Rep 455, CA (refd)
Young and Marten Ltd v McManus Childs Ltd [1969] 1 AC 454, HL (refd)

D **Legislation referred to**

Evidence Act 1950 s 45, s 58

Hor Shirley (Choon Hon Leng & Hoh Foong May with her) (Raja, Darryl & Loh) for the plaintiff.
E *Abdul Majid Md Yusof (Pakhruddin & Partners) for the defendant.*
Mohd Zainuddin bin Omar (Zulqarnian bin Lukman with him) (Asri Musa & Co) for the third party.

Lim Chong Fong JC:

F INTRODUCTION

[1] This is a suit brought by a design and build/turnkey civil engineering contractor against its soil investigation contractor for the production of
G inaccurate or erroneous soil report that led to subsequent road fill embankment construction failure. The soil investigation contractor in turn sought for indemnity or contribution from the consulting engineer by way of third party proceedings within the suit.

H **[2]** The plaintiff is a private limited company that was awarded the construction contract No JKR/IP/CJ/26/2006 ('construction contract') for the upgrading/raising the level of Jalan Chukai to Air Putih Km 4 to Km 6 and Km 11 to Km 14, Sungai Pinang, Kemaman, Terengganu ('the Project').

I **[3]** The defendants are related private limited companies that undertake soil investigation works.

[4] The third party is a partnership practicing in the style of the firm RMR Consult, consulting civil engineers appointed by the plaintiff to carry out the design and supervision of the project.

THE TRIAL PROCESS

[5] The trial in respect of the main action between the plaintiff and the defendants as well as the third party action between the defendants and third party were heard together. The trial lasted five days on 10, 13 and 24 November and 16 and 31 December 2014.

[6] The trial documents were marked as bundles A1 to A2, B1 to B12, C1 to C2, D1 to D2, E1 to E3 and F1 to F3. The documentary evidence and agreed facts were contained in bundles B1 to B12 which were consented to be B status; see *Jaafar bin Shaari & Anor v Tan Lip Eng & Anor* [1997] 3 MLJ 693 SC and C1 to C2; see s 58 of the Evidence Act 1950 respectively. In addition, exhibits P1 to D15 were also admitted in evidence during the course of the trial.

[7] Eight witnesses testified at the trial. They were as follows:

For the plaintiff

(a) Mohammad Zunaidi bin Annuar ('PW1'), the managing director of the plaintiff;

(b) Khong Ah Voon ('PW2'), the contracts manager of DKLS Construction Sdn Bhd, the main sub contractor of the plaintiff;

(c) Ir Haji Mohd Rozi Bin Salleh ('PW3'), a partner of RMR Consult; and

(d) Ir Dr Saravanan a/l Mariappan ('PW4'), a director of Nexus EC Sdn Bhd and expert witness brought by the plaintiff.

For the defendants

(a) Haji Mohamad Pauzi bin Haji Abdullah (DW1), a geo-science officer at the Malaysian Minerals and Geo-science Department;

(b) Ir Dr Chin Jhin Thiam ('DW2'), the principal of JT Geo Design and expert witness brought by the defendants; and

(c) Ir Haji Mohamed bin Daud (DW3), a director of the first defendant.

For the third party

(a) Ir Haji Mohd Rozi bin Salleh ('TPW1, also PW3');

(b) Ir Dr Saravanan a/l Mariappan ('TPW2, also PW4'); and

(c) Ir Nazemi Abdul Majid ('TPW3'), an engineer of RMR Consult, the third party.

[8] After the close of trial, the parties submitted their respective written closing submission in chief followed by written submission in reply. There was oral clarification held with counsel on 5 March 2014.

BACKGROUND FACTS

[9] The plaintiff was in 2003 awarded the construction contract by the Public Works Department Malaysia ('employer') at the contract price of RM 5,910,560 as evidenced by a jointly executed letter of acceptance of tender dated 14 August 2006. The construction contract comprised of various documents including a need statement issued by the employer ('need statement').

[10] Pursuant to the construction contract, the employer by a letter dated 30 August 2003 approved the appointment of the first and/or second defendant and the third party as consultants for the project.

[11] Accordingly, the plaintiff by a letter dated 2 September 2003 appointed the first and/or second defendants to carry out soil investigation work ('SI works') at the project site.

[12] The plaintiff also by a letter dated 2 September 2003 appointed the third party as the consultant engineer for the project.

[13] By an undated letter of the plaintiff, the defendants, the third party and Jurukur Putra was invited to attend a site visit on 15 September 2003 to discuss on matters pertaining to the project. The site meeting instead took place on 16 September 2003.

[14] On 6 October 2003, the third party by letter instructed the first defendant to carry out five exploratory boreholes at the locations indicated in the attached plans thereto. Upon receipt of the instruction, the first defendant commenced the SI works accordingly.

[15] Subsequently on 20 October 2003, the third party by fax memo issued fresh instructions to the first defendant superseding the instructions of 6 October 2003. The revised instruction required seven exploratory boreholes (including several at revised locations), four hand augers, three piezocone tests and 16 mackintosh probes to be carried out at the locations indicated in the

attached plans thereto. The third party also on that day submitted the soil investigation work document to the employer with a copy sent to the first defendant.

[16] The first defendant submitted the soil investigation report on 20 October 2003 dated 22 December 2003 ('first SI report') to the plaintiff.

[17] The plaintiff subsequently handed the first SI report to the third party who in turn forwarded a copy to the employer for its approval.

[18] On 4 November 2003, the first defendant submitted water samples to the Terengganu Chemistry Department for laboratory analysis.

[19] The first defendant also on 5 November 2003 appointed Strata Drill Sdn Bhd to carry out its behalf the piezocone tests and these results were forwarded by the first defendant to the third party on 10 December 2003.

[20] On 17 November 2003, the third party by fax memo instructed the first defendant to carry out various laboratory tests on the exploratory borehole results. The first defendant appointed Soilpro Technical services Sdn Bhd to carry out these tests on its behalf and submitted the test reports to the third party on 23 December 2003.

[21] The third party in reliance on the employer's approved first SI report and the other test reports and results then proceeded to design the project.

[22] The design was subsequently presented to the employer for approval. Upon obtaining the employer's approval, the design was then handed back to the plaintiff for construction at the km11 to km14 stretch of the project.

[23] During construction of the project, a massive road embankment fill failure occurred on 11 June 2007 adjacent to the new bridge abutment B of Sungai Pinang.

[24] Consequent to the failure, the plaintiff appointed Geopile Testing Resources, another soil investigation contractor to carry out further exploratory boreholes at the failed embankment area and a report was produced in July 2007.

[25] The third party also produced a report entitled 'Report on Failures of Approach Embankment' dated July 2007.

[26] Both reports were brought up to the attention of the employer by the plaintiff and the third party.

[27] The employer then on 4 September 2007 convened a special meeting that was attended by all relevant parties including the plaintiff, first defendant and the third party to discuss and resolve the road embankment fill failure. The employer instructed the plaintiff to appoint the first defendant to carry out confirmatory soil investigation at the failure location.

[28] Accordingly, the first defendant carried out the confirmatory soil investigation and a further soil investigation report dated 31 October 2007 ('second SI report') was submitted to the plaintiff.

[29] The third party also in December 2007 produced a report entitled 'Comparison of Soil Investigation Report' in relation to the failure of the embankment and the recommended remedial measures. This report were submitted to the employer for approval.

[30] However the employer neither approved nor accepted the proposed remedial measures. The employer instead by letter dated 8 January 2008 terminated the construction contract because of poor project work progress. Accordingly the plaintiff on 28 January 2008 wrote to the first defendant to put the first defendant on notice that the termination was caused by the first defendant's erroneous first SI report and the plaintiff would claim for all loss and damage suffered as the result thereof. The defendant replied on 23 April 2008 denying the plaintiff's allegations.

[31] The first defendant in July 2008 carried out another soil investigation and submitted a further soil investigation report (third SI report) to the plaintiff.

[32] The plaintiff analysed all the soil investigation reports and concluded that the defendants' first SI report was inaccurate/erroneous by reason of non disclosure of a thick layer of very silty clay soil in exploratory borehole BH-B4.

[33] Accordingly, the plaintiff took the position that the inaccuracy/error in the first SI report caused the aforesaid road embankment fill failure.

[34] The plaintiff hence commenced this suit in October 2009 to claim from the defendants for all loss and damage suffered including for the terminated construction contract amounting to RM5,894,758.23. The defendants in turn enjoined the third party for indemnity or contribution.

CONTENTIONS OF THE PLAINTIFF

[35] In brevity, the plaintiff argued that the defendants were duti bound both in contract and tort to exercise reasonable care, skill and diligence in the carrying out of the project soil investigation work.

[36] The defendants were in breach of contract and/or negligent in the production of the inaccurate/erroneous first SI report that was relied upon by the plaintiff in the design of the project work.

[37] In the result, the design of the road embankment fill produced by the third party for the plaintiff was affected and that led to the road embankment fill failure on 11 June 2007.

CONTENTIONS OF THE DEFENDANTS

[38] In defence, the defendants firstly retorted that it is only the first defendant and not the second defendant that was appointed by the plaintiff to undertake the project soil investigation work.

[39] The defendants then contended that the first SI report was a preliminary report of the project soil investigation work that was carried out in accordance with the specific direction of the third party and plaintiff.

[40] Furthermore, the responsibility for the sufficiency of the design was that of the third party and the design of the road fill embankment was not done by the third party with reasonable skill, care and diligence expected of the third party. In this regard, the third party was hence negligent for having failed to properly and correctly analyse, evaluate and interpret all the data available to the third party in the design of the project civil engineering works. The road embankment fill collapse was thus due to the fault of the third party.

CONTENTIONS OF THE THIRD PARTY

[41] The third party primarily contended that the defendants were directly appointed by the plaintiff as specialist soil investigation contractor and the third party was not privy thereto.

[42] Moreover, the third party was not under any duty to supervise or to re-examine the accuracy of the reports produced by the defendants. Furthermore, the third party did not possess adequate qualification as soil specialists or geologists to override the report produced by the defendants.

[43] There was nothing wrong with the specification of the soil investigation

work but the problem that caused the road embankment fill collapse was attributed to the error in the data of the first SI report.

FINDINGS OF THE COURT

[44] This is a moderately complex civil engineering construction case and I distill the following issues and in the sequence that require determination, to wit:

(a) the legal relationship and duties assumed by the respective parties;

(b) the role of the second defendant;

(c) the accuracy/correctness of the first SI report;

(d) the cause of the road fill embankment failure; and

(e) the resultant consequences.

LEGAL RELATIONSHIP AND DUTIES OF THE PARTIES

[45] It is common ground that the privity of contract is between the plaintiff and the first and/or second defendants and the plaintiff and the third party in respect of the SI works and engineering design respectively. It follows that the third party is the agent of the plaintiff vis a vis the defendants; see *Sutcliffe v Thackrah* [1974] AC 727 and adopted by the Court of Appeal in *Loh Chiak Eong & Anor v Lok Kok Beng & Ors* [2013] 1 MLJ 27; [2012] 9 CLJ 699.

[46] The nature of the contractual relationship between the plaintiff and the first and/or second defendantsis that of a design and build/turnkey contractor and specialist soil investigation sub contractor. I note that the letter of appointment of the defendants dated 2 September 2003 is rudimentary with no detail express terms mentioned therein. Thus, the contract must be construed in the light of the usual implied terms applicable to a normal construction contract, that is to say the contractor is obliged to:

(a) supply materials that are of good quality and reasonably fit for the purpose for which they will be used; and

(b) work in a workmanlike manner using all proper skill and care; see *Young & Marten Ltd v Mcmanus Childs Ltd* [1969] 1 AC 454 (HL).

It is not disputed that the defendants are well known specialist soil investigation contractors locally and were in fact designated to the plaintiff by the employer. For a specialist sub contractor, Purchas LJ held in *Great Nottingham Co-operative Society Ltd v Cementation Piling and Foundations Ltd and Ors* (1988) 17 Con LR 43 as follows at pp 57–58:

'... With one vital exception the position in the present case marches step by step

with the checklist to be found in the speech of Lord Roskill in *Junior Books Ltd v Veitchi Co Ltd* [1983] 3 All ER 210 at p 213-214; [1983] 1 AC 520 at p 546, namely (1) Cementation were nominated sub-contractors, (2) Cementation were specialists, (3) Cementation were fully appraised of the requirements and responsibilities of the main contract, (4) Cementation were solely responsible for the provision of piles, (5) the society relied on the Cementation's skill and experience, saving only the intervention of expert engineers and architects, (6) Cementation must have known that the society relied on their skill and experience, but as regards item (7) in the present case there was actual privity of contract, which was not present in the *Junior Book's* case.'

(Emphasis added); see also *Simaan General Contracting Co v Pilkington Glass (No 2)* [1988] 1 All ER 791.

In other words, there is deemed reliance by the plaintiff on the care and skill of the defendants in the performance of their obligations required under the construction contract. The requirements must be those as specified such as the employer's need statement and the direction of the third party as the agent of the plaintiff.

[47] As to tortious relationship particularly that of duty of care, I am mindful that in *Esso Petroleum Co Ltd v Mardon* [1976] QB 801 (CA), Lord Denning MR held at p 819 as follows:

'... in the case of a professional man, the duty to use reasonable care arises not only in contract, but is also imposed by the law apart from contract and is therefore actionable in tort.'

The scope of the professional man has been broadened in *Henderson v Merett Syndicates Ltd* [1995] 2 AC 464 HL to include persons who perform services of a professional or quasi-professional nature possessing a special expertise.

Both these English cases were accepted and followed by the Court of Appeal in *Lim Soh Wah & Anor v Wong Sin Chong & Anor & Another Appeal* [2001] 2 CLJ 344.

The professional man may include contractors as seen in *Barclay Bank Plc v Fairclough Building Ltd* (1995) 44 Con LR 35 (CA) and *Tesco Stores Ltd v Costain Construction Ltd and others* [2003] EWHC 1487.

[48] Generally it would therefore appear that the defendants owed the plaintiff the tortuous duty of care to use reasonable skill and care besides the contractual obligation to work in a workmanlike manner using all proper skill and care.

[49] As between the defendants and the third party, it seems settled in *PB Malaysia Sdn Bhd v Samudra (M) Sdn Bhd* [2009] 7 MLJ 681 where Ramly Ali J (now FCJ) held at pp 687–688 as follows:

A consulting engineer's duty is to design, advice on and supervise permanent work to be constructed or installed in accordance with the relevant contract. This is contrasted with the contractor who is in charge of temporary works and the working methods required to bring the permanent work to completion. The consultant engineer owes no duty with regard to temporary works. As such, the consulting engineer's duties must always be viewed in that light.

In the leading textbook on construction law, *Duncan Wallace's Hudson's Building & Engineering Contracts* (11th Ed), Vol 1, Sweet & Maxwell London, 1995 the learned author at p 166 says:

The A/E (architect/engineer)'s duty is to design permanent work which, once in place will best satisfy his client's requirements ... The contractor's areas of expertise, on the other hand, lies in the 'how' or method, as opposed to the 'what' or final result of construction; that is, in the design selection and organisation of temporary works and the various possible working methods required to bring the permanent work to completion.

Paras 7–037 at pp 899–900:

(g) Temporary works and methods of workings:

It has been seen that, in the absence of express provision, the choice of his existing working methods and temporary works (that is, the 'how' as opposed to the 'what' of construction) will be a matter for the contractor to decide, and that correspondingly the owner or his A/E will owe no duty of guidance or intervention to the contract in that regard.

At p 901:

Ideally, therefore, a construction contract should accept and indeed expressly state the general principle that temporary works or methods of working will, in the absence of express provision in the specification or elsewhere, be the choice and responsibility of the contractor.

Paras 2–138 at p 314:

the contractor is entitled to choose his own methods of working or temporary works; the corollary of this is that the contractor is not entitled, when faced with difficulties, to demand or require instructions as to how to overcome them. The architect's duty is normally confined to stipulating the final permanent result required, and if this had already been done, he is under no further duty to assist, and if inclined or requested to do so should normally be careful to adopt a permissive attitude rather than to give mandatory instructions. Contractors in difficulties, however, frequently demand instructions and even threaten to discontinue working unless told what to do. This attitude has no legal justification, and even if instructions are given they will not entitle a contractor to extra payment ...

Thus in Mayor, Aldermen, and Burgesses of *Kingston-upon-Hull v Harding & Anor* [1892] 2 QB 494, where the contractors' sureties argued that they were released by a jury's finding that there had been failure by the engineers to properly supervise which had led to skimping of the work ... Lord Esher MR said:

The question is, what is the meaning of the provision as to superintendence by the plaintiff's engineer? It was contended that the meaning really was that the corporation was to direct in what manner the work should be done. When one

considers the position of the corporation and the contractors and what the latter have to do, I think it is obvious that was not the meaning. The corporation never meant to undertake to direct in what manner the work should be done, nor did the contractors agree to submit to their directions. They were to do the work as they thought fit, and in the manner which their experience taught them was the best. The meaning of the provision was only that the corporation should have a right to observe and see how the work from time to time was being done ...

The above passage reflects a correct and realistic appreciation of the situation and rights of the parties under such terms.

In short, unless expressly provided for in the contract of engagement, the consulting engineer owes no duty to design, advise or supervise the contractor on his choice of the working method or sequence of construction or to offer a technical solution where the contractor has committed an error or is otherwise confronted with difficulties. (Emphasis added.)

[50] Although there is the board of engineers circular number 4 of 2005 that required the consulting engineer to take responsibility for sub surface investigation, it appears from the literal reading of the circular that it came into force only in 2005. In any event, the terms of engagement of the third party by the plaintiff as provided in the Board of Engineers Malaysia Scale of Fees (1998) that were applicable at the material time did not prescribe mandatory supervision of sub surface investigation on the part of the third party.

[51] In the premises, there is prima facie no duty owed by the third party to supervise the defendants carrying out of the SI works.

ROLE OF THE SECOND DEFENDANT

[52] Firstly I observed that the plaintiff's letter of appointment dated 2 September 2003 was merely addressed to 'Ikram'.

[53] DW3 testified that the second defendant was the subsidiary company of the first defendant. He also testified that the first defendant was involved in training, operating geotechnical laboratory, structural, material and soil investigation and testing and the second defendant was wholly involved in soil and land investigation and laboratory testing work. The operations of both defendants in the east coast of West Malaysia were loosely known as Ikram Timur.

[54] Pursuant to the letter of appointment, I noted that the third party issued the instructions dated 6 and 20 October 2003 to the first defendant.

[55] The first SI report was sent by the cover letter dated 23 December 2003 of the first defendant. The cover page and the authentication of factual test

page of the first SI report howeverindicated that it was prepared in the name of the second defendant. The accompanying borehole logs merely showed that they were done by Ikram Timur. At the trial, DW3 testified that the reference to the second defendant in the report was a slip and that was neither challenged by the plaintiff nor the third party.

[56] In fact, the invoices for the soil investigation work done were sent by the first defendant and paid accordingly by the plaintiff.

[57] In the circumstances, I find and hold that the contracting party was the first and not the second defendant vis a vis the plaintiff. In other words, the second defendant did not play any role in the project.

ACCURACY/CORRECTNESS OF THE FIRST SI REPORT

[58] This is the principal bone of contention. The pleading of the plaintiff in para 19 of the statement of claim generally states that the first SI report failed to disclose a 15 to 16.5mm thick layer of very soft silty clay at the area where the road fill embankment failure occurred. This is erroneous and/or inaccurate if compared to the subsequent soil investigation reports produced after the failure. Put simply, the nature and extent of weak soil was wrongly represented.

[59] It is noted that the third party only instructed for the carrying out of two exploratory bore holes in the vicinity of the road fill embankment failure as per their instructions dated 6 and 20 October 2003; to wit BH-B3 and BH-B4. The one that was closest to the failure was BH-B4.

[60] The borehole BH-B4 impugned by the plaintiff showed only soft to medium stiff silty clay with standard penetration test ('SPT') value of four of approximately 3.5 m thick at 1.5m to 5m depth beneath the ground surface. The deeper depths from 8m to 15m showed medium stiff silt with SPT value of 5 to 6. Borehole BH-B3 also showed soft to medium stiff silty clay with SPT value of 4 of approximately 5 m thick at 6m to 8m and then at 9m to 12m depth beneath the ground surface.

[61] By comparison and to prove its case, the plaintiff contended that the two exploratory boreholes contained in the second SI report carried out by the first defendant in 2007 after the failure differently revealed as follows:

(a) BH-B4a showed combination of layers of very loose clayey sand, silt and silty clay, all with SPT value of 0 of 11 m thick at 5m to 16m depth beneath the ground surface; and

(b) BH-B4b showed very soft silt of SPT value of 1 of approximately 4 m thick at the surface to 4m beneath the surface and thereafter very soft silt of SPT value 0 of about 11 m from 4m to 15m beneath the ground surface.

Moreover the further eight exploratory boreholes done by the first defendant in 2008 in the vicinity contained in the Third SI report also revealed as follows:

(a) BH-1 showed very soft silt with SPT value of 0 of approximately 6 m thick at depth 9m to 15m and very soft sand clay of SPT value 1 of a meter thick at 15m to 16m depth beneath the ground surface;

(b) BH-2 showed very soft silty clay with SPT value 0 of 6 meters thick at 9m to 15m depth beneath the ground surface;

(c) BH-3 showed soft silty clay with SPT value of 3 for a meter thick at depth 9 to 10m and thereafter very soft silt with SPT value of 0 of approximately 7 meters thick at 10m to 17m depth beneath the ground surface;

(d) BH-4 showed soft to very soft silt with SPT value of 2 to 1 of 3 meters thick at depth 7m to 10m and thereafter mostly very soft silty clay with SPT value of 0 for 8 meters at 10m to 18m depth beneath the ground surface;

(e) BH-5 showed very soft silty clay with SPT value of 0 of 11 meters thick at 4 m to 15m depth beneath the ground surface;

(f) BH-6 showed very soft silt with SPT value of 0 of 9 meters thick at 6 m to 15m depth beneath the ground surface;

(g) BH-7 showed very soft silty clay with SPT value of 0 of 9 meters thick at 7m to 16m depth beneath the ground surface; and

(h) BH-8 showed very soft silty clay with SPT value of 0 of 9 meters thick at 6m to 15m depth beneath the ground surface.

[62] In addition, the plaintiff pointed out to the exploratory borehole BH 1 done by Geopile Testing Resources in 2007 after the failure that showed very soft silty clay with SPT values of 0 to 3 of 9 meters between 3m to 12m beneath the ground surface and thereafter medium stiff silty clay with SPT of 8 to 9 for 3 meters between 12m to 15m beneath the ground surface.

[63] The precise location of the aforesaid boreholes is in my view important in order to view them in the correct context and perspective; see exhs P3 and P14. The impugned borehole BH-B4 as well as BH-B3 boreholeswere located at the road shoulder of the old road alignment but on opposite sides. The boreholes BH-B4a and BH1 to BH8 were located at the new road alignment. BH-B4b appears to be located at the virgin ground outside the road

alignments. BH1 as carried out by Geopile Testing Resources was outside and off the old road alignment. Nevertheless all these locations were in the vicinity of the banks of Sungei Pinang.

[64] My observation is that the plaintiff solely based its case on the comparison between BH-B4 and the post failure boreholes borelog. The plaintiff however did not go on to cogently illustrate or explain how the alleged inaccuracy or error came about particularly that the exploratory boring process and its subsequent reporting did not comply with *Nota Teknik* 20/98 and relevant standard engineering practice as required in cl 5.3 of section E, technical requirements in the need statement of the employer.

[65] Even by a mere comparison of the bore logs as undertaken by the plaintiff, I findthat the alleged non-represented layer of very soft silty clay was at best 12 meters (in fact on average between 7 to 9 meters) and not 15 to 16.5 meters thick as pleaded by the plaintiff. This is a fairly substantial difference.

[66] That notwithstanding, it is common sense that sub surface soil composition both in content and profile cannot be expected to be homogenous and consistent throughout a defined area. This is unlike a man-made object such as concrete as an example. The soil beneath the ground surface can either be natural occurring or disturbed, hence variation in content and profile can be expected, more so at a river bank where erosion and sedimentation often occur. This is self evident and can be seen even from the post failure exploratory borehole bore logsthemselves that none of them were identical in soil content and profile.

[67] In the premises, it is my view that mere comparison of bore logs is inconclusive and hence inadequate to blame the first defendant that the impugned borehole BH-B4 was in fact done inaccurately or erroneously.

[68] Be that as it may, it was alluded to at the trial that the impugned borehole BH-B4 was not carried out at the location required by the third party. DW3 testified that the BH-B4 was carried out at the road shoulder of the old road alignment as it was a standard practice and also sensible in view that the project involved the upgrading of the old road. He also mentioned that this was the agreed location pursuant to the site visit and meeting held on 16 September 2003 by reason that the originally desired location of the third party was in a swarm. However none of the witnesses of the first defendant and the third party at the trial were present in that site meeting. I have therefore discarded DW3's testimony on this aspect that it was an agreed location as hearsay and hence inadmissible evidence.

[69] The desired location of BH-B4 at the material time must be interpreted from the instructions of the third party of 6 and 20 October 2003. The borehole was depicted generally without locational coordinates provided in drawing ROAD2/2003/SI/LP/2. The drawing was drawn in a small 1:1000 scale, thus it is not possible to determine the exact location of the borehole by scaling off from the drawing. All that can reasonably in my view be inferred is that it was generally intended by the third party to be outside of the old road alignment at the side adjacent to Sungei Pinang; to wit the left side in the direction of Air Putih. And the first defendant did just that. Since the location of the borehole could be determined as such as generally intended, there was no duty on the part of the first defendant to enquire further from the third party.

[70] Consequently, I find and hold that the location of borehole BH-B4 as carried out by the first defendant was neither wrong nor in breach of the instruction of thethird party at that material time.

[71] The precise location intended by the third party was only known later post failure in 2007 to be at coordinates E:47052.0379, N:-80466.561; see exh P3. It is common ground that this intended location was in the swamp and beneath the constructed bridge along the new road alignment.

[72] TPW1/PW3 testified that it was no longer possible to carry out a confirmatory borehole to BH-B4 at the intended location post failure by reason that it was under and obstructed by the constructed bridge structure. Hence the first defendant was instructed to carry out borehole BH-B4a instead nearby. It is in my view fatal to the plaintiff's case that the confirmatory borehole was not carried out at the exact location where BH-B4 was in fact carried out. There was no impediment then to do so.

[73] Be that as it may, I find that the third party was not or ought not to have been misled by the bore log of BH-B4 in the first SI report that wasn't carried out at the location intended by the third party. As aforesaid, the intended location was in the swamp.However it is seen that besides reporting on the soil content and profile in each borehole, the bore log also stated the groundwater level encountered. As for BH-B4, the ground water was reported at 2.5m beneath the ground surface. Hence it is obvious that the borehole was done on dry land and not in the swamp, otherwise the water level would have been 0m; to wit on the surface.

[74] Both parties called an expert witness to enlighten the court on the technical issues. The expert witnesses are professional civil engineers with PhD qualifications. In attempt to support the plaintiff's case, its expert witness PW4 testified that the boreholes BH-B3 and BH-B4 were in his view likely not done by the plaintiff at the project site. In other words, the bore logs in the first SI

report for both these boreholes were fictitious in that the first defendant was dishonest and cheated in the carrying out of the SI works. This assertion is equivalent to fraud having been committed by the first defendant and that must be specifically pleaded; see *Tan Ah Tong v Parveen Kaur* [2011] 5 MLJ 428 and *Shell (M) Trading Sdn Bhd v Tan Bee Leh @ Tan Yue Khoen & Ors* [2013] 8 MLJ 533. The plaintiff did not however do so. Besides fraud must also be proved beyond a reasonable doubt, see *Asean Securities Paper Mills Sdn Bhd v CGU Insurance Bhd* [2007] 2 MLJ 301; [2007] 2 CLJ 1.

Be that as it may, PW4 justified his view by alluding to that one of the boreholes, that is to say BH-B3 showed deposit of limestone bedrock but from the geological map of Malaysia, the nearest limestone deposit present was at Gua Musang, Kelantan 165km away from the project site.This was however rebutted by DW1 whose field investigation and personal research confirmed the presence of limestone bedrock at only 21km away from the project site; see exhs D11 and D9.

PW4 in further substantiation of his point criticised the wash boring method of borehole exploration deployed by the first defendant that produced SPT value of 0. According to him the SPT value of 0 was inaccurate but which should be higher. I find difficulty in comprehending his argument here. firstly the impugned borehole BH-B4 did not exhibit soil of SPT value 0. Soils of SPT value 0 were only seen in the post failure bore logs that were carried out by the first defendant without dispute thereto. The borelog of Geopile Technical Resources also showed soil of SPT value of 0. Secondly there was no prohibition whether from the specification or as directed by the third party from using the wash boring method. It is odd for PW4 to be questioning it. Finally and more importantly I cannot see the nexus of this point on wash boring with that of cheating by not having carried out the boring as alleged.

PW4 nonetheless confidently concluded that it was impossible to have much difference in soil investigation data just for boreholes which were 10 to 11 meters apart done in 2003 and 2007. He has in my view simply compared the available bore logs but did not critically consider all the relevant surrounding circumstances such as their exact location, nature of the project site, etc.

[75] I find PW4 to be somewhat partisan and I am unconvinced by his simplistic testimony that the first defendant concocted bore logs BH-B3 and BH-B4.This is a very serious charge that must not be made on flimsy and irrational grounds. It is of utmost importance that an expert witness testifying pursuant to s 45 of the Evidence Act 1950 of the is independent. He must neither be over-ready to confirm preconceived theories nor zealously support or oppose an untenable hypothesis; see *National Justice Cia Naviera SA v Prudential Assurance Co Ltd, The Ikarian Reefer* [1995] 1 Lloyd's Rep 455 (CA). On the role and duties of an expert witness in court.

[76] I instead prefer the testimony of DW2, the expert witness brought by the defendants who in my view was more measured in his comments. In addition, I find that his command of the relevant facts and hence explanation on the technical issues thorough and cogent. It is trite that where there is conflicting expert testimony, the court has the right to prefer one opinion to the other; see *Tengku Abdullah ibni Sultan Abu Bakar & Ors v Mohd Latiff bin Shah Mohd & Ors and Other Appeals* [1996] 2 MLJ 265 (CA). In *Singapore Finance Ltd v Lim Kah Ngam (S'pore) Pte Ltd & Eugene HL Chan Associates (third party)* [1984] 2 MLJ 202, Lai Kew Chai J said that his approach in evaluating the conflicting experts' evidence is to examine the scientific grounds and bases on which they rely.

As for the impugned borehole BH-B4, I am satisfied with the explanation of DW2 that since the borehole was done on the road shoulder of the existing old road constructed 20 years earlier, it is therefore likely to be dissimilar with those post failure boreholes carried out on virgin river bank ground or recently constructed embankment. DW2 proffered five reasons for the differing soil content and profile between BH-B4 and the other post failure boreholes. They were as follows:

(a) first, locations of boreholes in 2003 and post failure boreholes in 2007-2008 were not sited at exactly similar locations;

(b) second, the earlier boreholes in 2003 were conducted at the shoulder of the existing road. The underlying soils below the existing road would have been subjected to some consolidation since the construction of the existing road. The underlying soils along the proposed new road/bridge would still be in an unconsolidated state;

(c) third, the meandering of the existing Sungei Pinang over time might have resulted in a variable localised ground condition with deposits of sediment (for example sand lenses, etc);

(d) fourth, the generally higher sand contents of the retrieved soil sample from the 2003 soil investigation suggested the potential presence of localised sand lenses that might have contributed to the higher field SPT value of 4 to 8 and 4 to 6 for BH-B3 and BH-B4 respectively; and

(e) fifth, the post failure boreholes were generally located at areas which could have been subjected to some disturbances due to the failed approach embankment. These disturbances were generally related to displacement of sub surface grounds which if large enough could cause silty clay or clayey silt soil to be in a remolded state with significantly reduced strength properties and stiffness.

[77] From my review and evaluation of the evidence adduced in totality, I accept the explanation of DW2 over that of PW4. My rejection of PW4's concoction hypothesis is also corroborated by the adduction of several

photographs of exploratory boreholes carried out by the first defendant in 2003 though I am mindful that there was no photograph taken for BH-B4. It is my view improbable that the first defendant actually carried out several exploratory boreholes but concocted several others. In the premises, I find and hold that the borehole BH-B4 as contained in the first SI report was neither inaccurate nor erroneous as so alleged by the plaintiff.

CAUSE OF ROAD FILL EMBANKMENT FAILURE

[78] I have in *KC Leong Holdings Sdn Bhd v Datin Moh Bee Ling* [2015] 7 MLJ 10 said as follows:

> In any case, whether for breach of contract or in negligence, it is trite law that the defendant (in a counterclaim) must prove that the alleged defects were caused by the plaintiff as a matter of fact. The classic maxim that she who asserts must prove her assertion applies here as codified in s 101 of the Evidence Act 1950

Likewise, it is incumbent upon the plaintiff here to prove that the failure of the road fill embankment was caused by the first defendant. This is essentially also question of fact but of some technical complexity.

[79] From the testimonies of TPW1/PW3 and both expert witnesses PW4 and DW2, it seems to be common ground that the failure occurred because the actual soil as encountered during construction differed from those envisaged as designed. The soil strength properties of the actual soil were weaker than that allowed in the design. The slope stability design of the embankment was in this respect inadequate and hence a deep seated rotational slope failure occurred at abutment B of the bridge in 2007.

[80] Both the plaintiff and the third party claimed that they relied on the bore logs of the first defendant particularly BH-B4 in the design of the road fill embankment.

[81] Technically as I understand it, the bore logs provided the raw soil content and profile data. They did not state the soil strength parameters, to wit, the angle of shearing resistance ('phi') and the soil cohesion ('Cu') required for slope stability design. These soil strength parameters could be obtained from vane shear in-situ test or laboratory tests if so directed by the engineer. The bore logs stated the SPT value that connoted the in-situ density of the soil. There is however no direct quantitative formulae relationship between thesoil density and the strength of the soil particularly that of cohesive silt or clay typed soils. The SPT value may be generally indicative of the soil strength qualitatively but it is up to the design engineer to derive his own soil strength parameters therefrom based on his professional interpretation and judgement, otherwise he has to further instruct for soil strength tests to be carried out.

[82] In this case, the first defendant was required by the third party to carry out several types of laboratory tests after the first SI report was presented to the third party. The first defendant was however not instructed or directed by the third party to carry out laboratory test or in-situ vane shear test to ascertain the actual soil strength parameters. TPW3, the design engineer of the third party testified that in his design, he took into consideration both bore logs BH-B3 and BH-B4 but adopted the data of the latter which showed lower and weaker SPT values. He averaged the SPT value at 5 and postulated from his experience in other projects soil strength parameters of phi = 0 and Cu = 30 kPa. By virtue of the presence of sand in that borehole from the results of the laboratory tests done by the first defendant, he further adjusted the parameters to phi = 16 and Cu = 10 kPa. These adjusted parameters were then used to design the road fill embankment of 6.1 meters high. The resultant factor of safety achieved was 1.386 and that was above the minimum of 1.3 according to him.

[83] Both expert witnesses DW2 and PW4 in their respective written reports (see bundle B9 pp 1–277 and 278–570 respectively) also analysed the road fill embankment stability.

[84] From the bore logs of 2003 particularly BH-B4, PW4 derived differing soil strength parameters from that by TPW3, to wit: Cu = 25 kPa and unit weight of 17 KN/m3 and he concluded that the resultant achieved factor of safety was 1.27 for the embankment fill height of 5.5 meters and that was also still above the minimum of 1.2 specified in the JKR Nota Teknik.

[85] DW2 however appear to have analysed theembankment stability differently using the total stress approach and found that the adopted soil parameters of phi = 16 and Cu = 10 kPa derived by TPW3 were unsatisfactory in respect of the assessment of the more critical short term undrained loading of the cohesive type clay/silty soil present at the project site. From DW2's computation using that approach, the resultant achieved factor of safety of 1.16 and 1.08 respectively for fill embankment height of 5.5 and 6.0 meters respectively were inadequate and below the specified minimum. In other words, there was inherent risk of embankment failure occurring.

[86] In addition, DW2 pointed out that it was wrong of the third party to have merely relied on BH-B4 but discarded other available soil data in the vicinity such as the piezocone PZ-2 test results which showed weaker soils of SPT value of 1 to 3 for depth about 0.55 to 13.7 meters beneath the ground surface. He was also of the considered opinion that the 2003 exploratory bore holes as carried out were preliminary especially from the number of boreholes ordered as well as their locations which were not along the new road alignment as it was then still uncertain.

DW2 was nevertheless of the view that a careful detailed assessment of all

available soil investigation data would have alerted the third party to the potential presence of soft ground conditions. In the absence of detail soil investigation at the actual new road alignment that is often taken at the centre line of the alignment, it would according to him have been prudent and consistent with good engineering practice for the design engineer to have adopted a generally more conservative interpretation of the ground conditions for the design. This is particularly so in a design and build/turnkey contract where the contractor must ensure that the work is fit for its purpose. In the circumstances then, he took the view that the third party should have based their design on the premise that the existing ground condition at the actual alignment comprised of an upper layer of predominantly very soft to soft clayey silt of average thickness of about 14 meters.

[87] According to DW2, the third party also has a continuing professional responsibility to review their design to ensure that the design was adequate. My view is that just like an architect; the engineer's duty does not end when the construction work starts. In *Brickfield Properties Ltd v Newton* [1971] 1 WLR 862 Sachs LJ said at p 873 that:

> An architect is under a continuing duty to check that his design will work in practice and to correct any errors which may emerge ...

DW2 went on to testify that the third party did not instruct for further confirmatory or exploratory boreholes to be carried by the first defendant in the course of the detail design of the works when the new road alignment was known. In addition, he was of the opinion that the third party should have been alerted to the very weak soils beneath the surface during the course of the spun pile driving at abutment B of the bridge immediately adjacent to the embankment fill. The pile driving records showed that many piles sank deep into the very soft soil by their own dead weight which was very telling of a thick layer of very soft soil beneath.

[88] I am more persuaded by the explanation of DW2 which is comparatively in my view comprehensive, succinct and cogent. It is therefore plain to me on the balance of probabilities that the cause of the rotational slope failure of the road embankment fill was design inadequacy and I so find and hold accordingly. Since the third party is responsible for the design, the fault must lie on them. I am mindful that the third party whilst undertaking the design relied on the 2003 bore logs particularly BH-B4. The first defendant would have contributed to the fault if the bore logs were inaccurate and/or erroneous but that was not the case as found by me herein above. As pointed out by DW2, the fill embankment design of the third party in reliance thereon was in any event inherently at risk of failure. It is consequently unsurprising that the failure occurred when even weaker soil was actually encountered at the project site.The first defendant is in my view thus wholly exonerated of fault here.

[89] It is also immaterial that the third party wasn't geologists or soil experts as alleged by both of them. I accept that the third party discharged its responsibility to the extent that the first defendant was engaged to carry out the SI works. Nonetheless, if the third party wasn't competent or in the position to undertake the required design tasks based on sufficiency of the data available from the SI works, the third party ought to have chosen one of the three courses of action alluded to by Walker Carter official referee in *Moresk Cleaners Ltd v Hicks* [1966] 2 Lloyds Rep 338 at p 342:

> ... if a building owner entrusts the task of designing of a building to an architect, he is entitled to look to that architect to see that the building is properly designed. The architect has no power whatever to delegate that duty to anybody else, certainly not to a contractor ... If the defendant was not able, because this form of reinforced concrete was a comparatively new form of construction, to design it himself, he had three courses open to him. One was to say 'This is not my field'. The second was to go to the client, the building owner, and say 'This reinforced concrete is out of my line. I would like you to appoint a structural engineer to deal with this aspect of the matter.' Or he can, while retaining responsibility for the design himself seek the advise and assistance of a structural engineer, paying for his service out of his own pocket but having at any rate the satisfaction of knowing that if he acts upon that advice and it turns out to be wrong, the person whom he employed to give the advise will owe the same duty to him as he, the architect, owes to the building owner.

Hence the third party ought to have reverted to the plaintiff or the third party itself employ others at its costs to undertake further soil investigation and/or soil strength tests as was undoubtedly necessary here.

RESULTANT CONSEQUENCES

[90] I have held herein above that the third party is the agent of the plaintiff in a design and build/turnkey contracting arrangement. Since the cause of the road fill embankment failurehas been found to be due to inadequate design and hence the fault of the third party, it follows that the plaintiff as the principal must assume and absorb the consequences. Accordingly the plaintiff's case against the defendants must fail. The defendants were neither in breach of contract nor negligent. It is thus not necessary for me to determine further into the damages aspect of the plaintiff's claim.

[91] Consequently, it is also unnecessary for me to determine the third party action by reason that the defendants are not liable to the plaintiff.

CONCLUSION

[92] The heart of the whole problem here in my view is not inaccurate or erroneous soil investigation but insufficient soil investigation that led to inadequate design of the embankment. This tends to be sadly the case in many

A design and build/turnkey contracting arrangements where there is often the fervour to cut costs to the bare minimum.

[93] For the reasons aforesaid, I find that the plaintiff's case lacked merit and I hereby dismiss the plaintiff's claim with costs of RM 35,000.

B

[94] I hereby also dismiss the defendants' claim against the third party but with no order as to costs by reason that the plaintiff's case was brought due to the fault of the third party.

C *Plaintiff's claim dismissed with costs and defendants' claim against third party dismissed with no order as to costs.*

Reported by Kanesh Sundram

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